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Authors

Borovsky, Arielle
Elman, Jeffrey

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Individual differences in anticipatory eye-movements: Vocabulary size is associated with speed of noun-verb integration

Arielle Borovsky
UCSD

Jeffrey Elman
UCSD

Abstract: Humans can integrate information from a rapidly changing speech stream with astonishing speed. In this study, we measure the impact of vocabulary knowledge on the incremental integration of speech using language-mediated anticipatory eye-movements. Following Kamide, Altmann & Haywood (2003), Experiment 2, we examined the degree to which an upcoming sentential Theme is anticipated by a combination of information from an Agent and Verb (eg. "The pirate hides the treasure" vs. "The dog hides the bones"). Replicating prior results, combinatory effects of the Agent and Verb yielded anticipatory looks to the Theme. When participant's performance was split by receptive vocabulary score, differences in anticipatory eye movements were apparent. The group with higher vocabulary scores was faster to integrate Agent and Verb information to correctly look at the upcoming Theme. Together our findings suggest that prior language knowledge plays a pivotal role in even simple sentence processing tasks.